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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Stephen A. Thomas

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03/08/2006

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EXAMINER

BELLO, AGUSTIN

ART UNIT

PAPER NUMBER

2633

DATE MAILED: 03/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/045,652

Applicant(s)

THOMAS ET AL.

Examiner

Agustin Bello

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 February 2006.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-33 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-33 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 02/06/06 has been entered.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 4-5, 9-10, 12-21, 24, 25, 27, 30, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (U.S. Patent No. 6,889,007) in view of Dravida (U.S. Patent Application Publication No. 2002/0105965).

Regarding claims 1, 13, 24, 25, 27, and 30, Wang teaches a laser transceiver node (reference numeral 120A in Figure 1) for receiving downstream packets, a subscriber optical interface (reference numeral 120C in Figure 1) coupled to the laser transceiver node for receiving downstream optical packets and converting the downstream optical packets into an electrical domain to support services of a subscriber (column 7 lines 45-55), wherein the laser transceiver node further comprises, a routing device (reference numerals 228J-228N in Figure 2) for directing downstream packets in an electrical domain to a plurality of multiplexers (reference

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numeral 342 in Figure 3 representing multiplexers in each of the transceivers of the routing device encompassing transceivers 228J-228N and the multiplexers further comprising connections to the wavelength access controller, reference numeral 204 in Figure 2), the plurality of multiplexers for receiving downstream packets from the routing device, wherein each multiplexer comprises a final stage (reference numeral 204 in Figure 2) for controlling bandwidth of the downstream packets in the electrical domain (column 5 lines 1-17) relative to the subscriber optical interface, the routing device determining which downstream packets are sent to a respective multiplexer (e.g. according to a particular service demand: IP, Ethernet, ATM, SONET), each multiplexer comprising. Wang differs from the claimed invention in two respects. First, Wang fails to specifically teach a plurality of classifiers for determining type of information contained in a downstream packet and for assigning a downstream packet to a particular policer, and a plurality of policers for controlling bandwidth based upon a comparison between parameters assigned to each policer by a network provider and a downstream packet. Second, Wang differs from the claimed invention in that Wang fails to specifically teach laser transmitters coupled to the multiplexers, wherein each multiplexer is coupled to and modulates a respective laser transmitter for converting the downstream packets into an optical domain that are sent to a respective subscriber optical interface. However, Wang clearly teaches optical transmitters (column 6 lines 29-37) and optical fibers (reference numeral 130 in Figure 2) both of which are consistent laser optical transmission systems. Furthermore, the use of laser transmitters is very well known in the art of optical communication and Official Notice is given that they are well known in the art and that they are used for converting the downstream packets into an optical domain that are sent to a respective subscriber optical interface. One skilled in the

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art would have been motivated to employ laser transmitters in the device of Wang in order to take advantage of a laser's ability to produce coherent light that can travel a great distance. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to include laser transmitters in the device of Wang.

As to Wang's failure to specifically teach structural elements including a plurality of classifiers for determining type of information contained in a downstream packet and for assigning a downstream packet to a particular policer, and a plurality of policers for controlling bandwidth based upon a comparison between parameters assigned to each policer by a network provider and a downstream packet, the examiner notes that Dravida teaches each of the missing structural elements (Figure 28) while Wang does disclose classifying and policing (column 5 lines 27-34). One skilled in the art would have been motivated to employ the structural elements taught by Dravida in the multiplexers of Wang in order to ensure compliance of the packets being transmitted, thereby ensuring that network capacity is not wasted (paragraph [0249] of Dravida). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to include the elements taught by Dravida in the device of Wang.

Regarding claims 2, 14, and 31, the combination of Wang and Dravida teaches that the parameters assigned to each policer comprise at least one of a peak rate, a burst size, and a sustained rate (paragraph [0246-00253]).

Regarding claim 4, the combination of Wang and Dravida teaches that each optical tap multiplexer further comprises a plurality of output buffers (reference numeral 1310, 1314 in Figure 28 of Dravida) for storing at least one downstream packet received from a respective policer.

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Regarding claim 5, the combination of Wang and Dravida teaches a plurality of output buffers (reference numeral 1310 in Figure 28 of Dravida), each output buffer having an assigned priority value that is associated with an output buffer emptying sequence (paragraph [0237]). .

Regarding claim 9, Wang teaches that parameters assigned to a policer correspond with a bandwidth subscription of a subscriber (QoS throughout Wang).

Regarding claim 10, Wang teaches that the bandwidth subscription measures a predetermined amount of a data to be received by a subscriber in bits per second (inherent).

Regarding claim 12, the combination of Wang and Dravida teaches that each classifier and each policer comprises one of a Field programmable gate array (FPGA) and an application specific integrated circuit (ASIC) (reference numeral 208 in Figure 2 of Wang).

Regarding claim 15, the combination of Wang and Dravida teaches executing a token bucket algorithm to measure the sustained rate (“token bucket” throughout Dravida).

Regarding claim 16, the combination of Wang and Dravida teaches determining if a downstream packet exceeds a peak rate; and discarding a downstream packet if the downstream packet exceeds the peak rate (e.g. via policers in both references).

Regarding claim 17, the combination of Wang and Dravida teaches the step of executing a token bucket algorithm to measure the peak rate (“token bucket” throughout Dravida).

Regarding claim 18 and 19, the combination of Wang and Dravida teaches that the step of assigning one of two priority values to a downstream packet comprises the step of assigning a maximum drop probability value to the downstream packet, wherein the maximum drop probability value based upon a determination of whether a packet matches sustained rate (via the policers and classifiers throughout Wang and Dravida).

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Regarding claim 20, the combination of Wang and Dravida teaches that the communication traffic profile comprises one of a minimum bandwidth that a class or group of classes of subscribers is assured of receiving and a maximum bandwidth the subscriber can use over a time period (e.g. QoS throughout Wang).

Regarding claim 21, the combination of Wang and Dravida teaches the step of removing one or more packets from a plurality of output buffers in a predetermined order that corresponds with priority assignment given to each buffer relative to other buffers (e.g. according to QoS agreements in both references).

4. Claims 3, 6, 7, 8, 11, 22, 23, 26, 28, 29, 32, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang in view of Dravida as applied to claims 1, 2, 24, 25, 27, 30, and 31 above, and further in view of Zheng (U.S. Patent No. 6,611,522).

Regarding claims 3, 6, 7, 8, 22, 26, 28, 29, 32, and 33, the combination of Wang and Dravida differs from the claimed invention in that it fails to specifically teach that each policer controls bandwidth by assigning a weighted early random discard value to the packet. However, Zheng teaches this method of policing. (e.g. inherent in the use of Random Early Detect elements and method described in column 4 lines 51-59). One skilled in the art would have been motivated to employ a weighted early random discard as taught by Zheng in the device of the combination of Wang and Dravida in order to avoid the possibility of data flow using up a disproportionate amount of bandwidth in the communication node (column 4 lines 51-59 of Zheng). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to employ a weighted early random discard as taught by Zheng in the device of the combination of Wang and Dravida.

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Regarding claims 11 and 23, the combination of Wang and Dravida differs from the claimed invention in that it fails to specifically teach that one of the classifiers evaluates a differentiated service code point (DSCP) value of each downstream packet. However, Zheng teaches a classifier that evaluates a differentiated service code point (DSCP) value of each downstream packet (column 16 lines 6-33 of Zheng). One skilled in the art would have been motivated to employ a classifier that evaluates a differentiated service code point (DSCP) value of each downstream packet in order to provide for “best effort” service (column 16 lines 6-33 of Zheng). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to employ a classifier that evaluates a differentiated service code point (DSCP) value of each downstream packet as taught by Zheng in the combination of Wang and Dravida.

#### ***Response to Arguments***

5. Applicant's arguments with respect to claims 1-33 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agustin Bello whose telephone number is (571) 272-3026. The examiner can normally be reached on M-F 8:30-6:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AB

  
**AGUSTIN BELLO**  
**PRIMARY EXAMINER**